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SEQUENCE LISTING

<110> CHEUNG, WING Y. GAGNON, MARIE-JOSEE LAFOREST, MARTIN LANDRY, BENOIT S. <120> COMPOSITIONS AND METHODS FOR IDENTIFYING PLANTS HAVING INCREASED TOLERANCE TO IMIDAZOLINONE HERBICIDES <130> 15039-2 <140> <141> <150> 60/421,993 <151> 2002-10-29 <160> 116 <170> PatentIn Ver. 3.2 <210> 1 <211> 2083 <212> DNA <213> Brassica napus <220> <221> CDS <222> (25)..(1989) <400> 1 tcatcatctc tctctcctca aacc atg gcg gcg gca aca tcg tct tct ccg Met Ala Ala Thr Ser Ser Pro atc tcc tta acc gct aaa cct tct tcc aaa tcc cct cta ccc att tcc 99 Ile Ser Leu Thr Ala Lys Pro Ser Ser Lys Ser Pro Leu Pro Ile Ser 20 aga ttc tcc ctt ccc ttc tcc tta acc cca cag aaa gac tcc tcc cgt 147 Arg Phe Ser Leu Pro Phe Ser Leu Thr Pro Gln Lys Asp Ser Ser Arg ctc cac cgt cct ctc gcc atc tcc gcc gtt ctc aac tca ccc gtc aat 195 Leu His Arg Pro Leu Ala Ile Ser Ala Val Leu Asn Ser Pro Val Asn gtc gca cct cct tcc cct gaa aaa acc gac aag aac aag act ttc gtc 243 Val Ala Pro Pro Ser Pro Glu Lys Thr Asp Lys Asn Lys Thr Phe Val 65

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Lys Pro Ser Ser Arg Leu His Arg Pro Leu Ala Ile Ser Ala Val Leu
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Asn Ser Pro Val Asn Val Ala Pro Glu Lys Thr Asp Lys Ile Lys Thr
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Phe Ile Ser Arg Tyr Ala Pro Asp Glu Pro Arg Lys Gly Ala Asp Ile
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Leu Val Glu Ala Leu Glu Arg Gln Gly Val Glu Thr Val Phe Ala Tyr
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<210>		
<211><212>		
(213)	Artificial Sequence	
<220>		
	Description of Artificial Sequence: Synthetic	
	oligonucleotide	
	3	
<400>	83	
caaca	ggtac ggtccaggtg	20
<210>		
<211><212>		
	Artificial Sequence	
\213/	Artificial Sequence	
<220>		
<223>	Description of Artificial Sequence: Synthetic	
	oligonucleotide	
<400>	84	
agatga	acatc caacaggtac	20
<210>	0.5	
<211>		
<212>	·	
	Artificial Sequence	
<220>		
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	oligonucleotide	
400		
<400>		
gicaiç	gcaat gggaagatcg g	21
<210>	86	
<211>		
<212>		
<213>	Artificial Sequence	
<220>		
<223>	Description of Artificial Sequence: Synthetic	
	oligonucleotide	
<400>	86	
	ttcc cattgcatga c	21
_	JJ# +	21

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<210> 87
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide
<400> 87
gtcatgcaat tggaagatcg g
                                                                    21
<210> 88
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide
<400> 88
ccgatcttcc aattgcatga c
                                                                    21
<210> 89
<211> 19
<212> DNA
<213> Artificial Sequence
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      primer
<400> 89
tacatctttg aaagtgcca
                                                                    19
<210> 90
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic
<400> 90
ggcgtttggt gttaggtttg a
                                                                    21
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<210> 91
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic
      primer
<400> 91
cgtctgggaa caaccaaaag t
                                                                    21
<210> 92
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic
      primer
<400> 92
ggaaagctcg aggctttcgc t
                                                                    21
<210> 93
<211> 22
<212> DNA
<213> Artificial Sequence
<223> Description of Artificial Sequence: Synthetic
      primer
<400> 93
atcaccagct tcatctctca gt
                                                                    22
<210> 94
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic
      primer
<400> 94
ggaaagctcg aggcgtttgc g
                                                                    21
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<210> 95
<211> 16
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic
<400> 95
gtgttaccga tgatcc
                                                                     16
<210> 96
<211> 16
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic
      primer
<400> 96
gggatggtca tgcaat
                                                                     16
<210> 97
<211> 10
<212> DNA
<213> Artificial Sequence
<223> Description of Artificial Sequence: Synthetic
      primer
<400> 97
caagtggtgg
                                                                    10
<210> 98
<211> 10
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic
      primer
<400> 98
caaatggtgg
                                                                    10
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9

9

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<210> 99
 <211> 9
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Description of Artificial Sequence: Synthetic
 <400> 99
 gggaagatc
 <210> 100
 <211> 9
 <212> DNA
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 <223> Description of Artificial Sequence: Synthetic
       primer
 <400> 100
 tggaagatc
<210> 101
 <211> 655
 <212> PRT
 <213> Brassica napus
 <220>
 <221> MOD RES
 <222> (268) .. (268)
 <223> Variable amino acid
 <400> 101
 Met Ala Ala Ala Thr Ser Ser Pro Ile Ser Leu Thr Ala Lys Pro
                   5
 Ser Ser Lys Ser Pro Leu Pro Ile Ser Arg Phe Ser Leu Pro Phe Ser
 Leu Thr Pro Gln Lys Asp Ser Ser Arg Leu His Arg Pro Leu Ala Ile
 Ser Ala Val Leu Asn Ser Pro Val Asn Val Ala Pro Pro Ser Pro Glu
 Lys Thr Asp Lys Asn Lys Thr Phe Val Ser Arg Tyr Ala Pro Asp Glu
 Pro Arg Lys Gly Ala Asp Ile Leu Val Glu Ala Leu Glu Arg Gln Gly
                  85
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Val Glu Thr Val Phe Ala Tyr Pro Gly Gly Ala Ser Met Glu Ile His 100 105 110

Gln Ala Leu Thr Arg Ser Ser Thr Ile Arg Asn Val Leu Pro Arg His 115 120 125

Glu Gln Gly Gly Val Phe Ala Ala Glu Gly Tyr Ala Arg Ser Ser Gly 130 135 140

Lys Pro Gly Ile Cys Ile Ala Thr Ser Gly Pro Gly Ala Thr Asn Leu 145 150 155 160

Val Ser Gly Leu Ala Asp Ala Met Leu Asp Ser Val Pro Leu Val Ala 165 170 175

Ile Thr Gly Gln Val Pro Arg Arg Met Ile Gly Thr Asp Ala Phe Gln
180 185 190

Glu Thr Pro Ile Val Glu Val Thr Arg Ser Ile Thr Lys His Asn Tyr 195 200 205

Leu Val Met Asp Val Asp Asp Ile Pro Arg Ile Val Gln Glu Ala Phe 210 215 220

Phe Leu Ala Thr Ser Gly Arg Pro Gly Pro Val Leu Val Asp Val Pro 225 230 235 240

Lys Asp Ile Gln Gln Leu Ala Ile Pro Asn Trp Asp Gln Pro Met 245 250 255

Arg Leu Pro Gly Tyr Met Ser Arg Leu Pro Gln Xaa Pro Glu Val Ser 260 265 270

Gln Leu Gly Gln Ile Val Arg Leu Ile Ser Glu Ser Lys Arg Pro Val 275 280 285

Leu Tyr Val Gly Gly Gly Ser Leu Asn Ser Ser Glu Glu Leu Gly Arg
290 295 300

Phe Val Glu Leu Thr Gly Ile Pro Val Ala Ser Thr Leu Met Gly Leu 305 310 315 320

Gly Ser Tyr Pro Cys Asn Asp Glu Leu Ser Leu Gln Met Leu Gly Met 325 330 335

His Gly Thr Val Tyr Ala Asn Tyr Ala Val Glu His Ser Asp Leu Leu 340 345 350

Leu Ala Phe Gly Val Arg Phe Asp Asp Arg Val Thr Gly Lys Leu Glu 355 360 365

Ala Phe Ala Ser Arg Ala Lys Ile Val His Ile Asp Ile Asp Ser Ala 370 375 380

- Glu Ile Gly Lys Asn Lys Thr Pro His Val Ser Val Cys Gly Asp Val
 385 390 395 400
- Lys Leu Ala Leu Gln Gly Met Asn Lys Val Leu Glu Asn Arg Ala Glu 405 410 415
- Glu Leu Lys Leu Asp Phe Gly Val Trp Arg Ser Glu Leu Ser Glu Gln
 420 425 430
- Lys Gln Lys Phe Pro Leu Ser Phe Lys Thr Phe Gly Glu Ala Ile Pro 435 440 445
- Pro Gln Tyr Ala Ile Gln Ile Leu Asp Glu Leu Thr Glu Gly Lys Ala 450 455 460
- Ile Ile Ser Thr Gly Val Gly Gln Arg Gln Met Trp Ala Ala Gln Phe 465 470 475 480
- Tyr Lys Tyr Arg Lys Pro Arg Gln Trp Leu Ser Ser Ser Gly Leu Gly
 485 490 495
- Ala Met Gly Phe Gly Leu Pro Ala Ala Ile Gly Ala Ser Val Ala Asn 500 505 510
- Pro Asp Ala Ile Val Val Asp Ile Asp Gly Asp Gly Ser Phe Ile Met 515 520 525
- Asn Val Gln Glu Leu Ala Thr Ile Arg Val Glu Asn Leu Pro Val Lys 530 540
- Ile Leu Leu Leu Asn Asn Gln His Leu Gly Met Val Met Gln Trp Glu
 545 550 555 560
- Asp Arg Phe Tyr Lys Ala Asn Arg Ala His Thr Tyr Leu Gly Asp Pro
 565 570 575
- Ala Arg Glu Asn Glu Ile Phe Pro Asn Met Leu Gln Phe Ala Gly Ala 580 585 590
- Cys Gly Ile Pro Ala Ala Arg Val Thr Lys Lys Glu Glu Leu Arg Glu
 595 600 605
- Ala Ile Gln Thr Met Leu Asp Thr Pro Gly Pro Tyr Leu Leu Asp Val 610 615 620
- Ile Cys Pro His Gln Glu His Val Leu Pro Met Ile Pro Asn Gly Gly 625 630 635 640
- Thr Phe Lys Asp Val Ile Thr Glu Gly Asp Gly Arg Thr Lys Tyr 645 650 655

<210> 102

<211> 652

<212> PRT

<213> Brassica napus

<220>

<221> MOD RES

<222> (464)..(464)

<223> Variable amino acid

<400> 102

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Ser Ser Lys Ser Pro Leu Pro Ile Ser Arg Phe Ser Leu Pro Phe Ser 20 25 30

Leu Thr Pro Gln Lys Pro Ser Ser Arg Leu His Arg Pro Leu Ala Ile 35 40 45

Ser Ala Val Leu Asn Ser Pro Val Asn Val Ala Pro Glu Lys Thr Asp
50 55 60

Lys Ile Lys Thr Phe Ile Ser Arg Tyr Ala Pro Asp Glu Pro Arg Lys 65 70 75 80

Gly Ala Asp Ile Leu Val Glu Ala Leu Glu Arg Gln Gly Val Glu Thr 85 90 95

Val Phe Ala Tyr Pro Gly Gly Ala Ser Met Glu Ile His Gln Ala Leu 100 105 110

Thr Arg Ser Ser Thr Ile Arg Asn Val Leu Pro Arg His Glu Gln Gly
115 120 125

Gly Val Phe Ala Ala Glu Gly Tyr Ala Arg Ser Ser Gly Lys Pro Gly 130 135 140

Ile Cys Ile Ala Thr Ser Gly Pro Gly Ala Thr Asn Leu Val Ser Gly
145 150 155 160

Leu Ala Asp Ala Met Leu Asp Ser Val Pro Leu Val Ala Ile Thr Gly
165 170 175

Gln Val Pro Arg Arg Met Ile Gly Thr Asp Ala Phe Gln Glu Thr Pro 180 185 190

Ile Val Glu Val Thr Arg Ser Ile Thr Lys His Asn Tyr Leu Val Met 195 200 205

Asp Val Asp Asp Ile Pro Arg Ile Val Gln Glu Ala Phe Phe Leu Ala 210 215 220

- Thr Ser Gly Arg Pro Gly Pro Val Leu Val Asp Val Pro Lys Asp Ile 225 230 235 240

 Gln Gln Gln Leu Ala Ile Pro Asn Trp Asp Gln Pro Met Arg Leu Pro
- 245 250 255
- Gly Tyr Met Ser Arg Leu Pro Gln Pro Pro Glu Val Ser Gln Leu Gly 260 265 270
- Gln Ile Val Arg Leu Ile Ser Glu Ser Lys Arg Pro Val Leu Tyr Val 275 280 285
- Gly Gly Ser Leu Asn Ser Ser Glu Glu Leu Gly Arg Phe Val Glu 290 295 300
- Leu Thr Gly Ile Pro Val Ala Ser Thr Leu Met Gly Leu Gly Ser Tyr 305 310 315 320
- Pro Cys Asn Asp Glu Leu Ser Leu Gln Met Leu Gly Met His Gly Thr 325 330 335
- Val Tyr Ala Asn Tyr Ala Val Glu His Ser Asp Leu Leu Leu Ala Phe 340 345 350
- Gly Val Arg Phe Asp Asp Arg Val Thr Gly Lys Leu Glu Ala Phe Ala 355 360 365
- Ser Arg Ala Lys Ile Val His Ile Asp Ile Asp Ser Ala Glu Ile Gly 370 375 380
- Lys Asn Lys Thr Pro His Val Ser Val Cys Gly Asp Val Lys Leu Ala 385 390 395 400
- Leu Gln Gly Met Asn Lys Val Leu Glu Asn Arg Ala Glu Glu Leu Lys
 405 410 415
- Leu Asp Phe Gly Val Trp Arg Ser Glu Leu Ser Glu Gln Lys Gln Lys 420 425 430
- Phe Pro Leu Ser Phe Lys Thr Phe Gly Glu Ala Ile Pro Pro Gln Tyr 435 440 445
- Ala Ile Gln Val Leu Asp Glu Leu Thr Gln Gly Lys Ala Ile Ile Xaa 450 455 460
- Thr Gly Val Gly Gln His Gln Met Trp Ala Ala Gln Phe Tyr Lys Tyr 465 470 475 480
- Arg Lys Pro Arg Gln Trp Leu Ser Ser Gly Leu Gly Ala Met Gly 485 490 495
- Phe Gly Leu Pro Ala Ala Ile Gly Ala Ser Val Ala Asn Pro Asp Ala 500 505 510

Ile Val Val Asp Ile Asp Gly Asp Gly Ser Phe Ile Met Asn Val Gln 515 520 525

Glu Leu Ala Thr Ile Arg Val Glu Asn Leu Pro Val Lys Ile Leu Leu 530 535 540

Leu Asn Asn Gln His Leu Gly Met Val Met Gln Leu Glu Asp Arg Phe 545 550 555 560

Tyr Lys Ala Asn Arg Ala His Thr Tyr Leu Gly Asp Pro Ala Arg Glu
565 570 575

Asn Glu Ile Phe Pro Asn Met Leu Gln Phe Ala Gly Ala Cys Gly Ile 580 585 590

Pro Ala Ala Arg Val Thr Lys Lys Glu Glu Leu Arg Glu Ala Ile Gln 595 600 605

Thr Met Leu Asp Thr Pro Gly Pro Tyr Leu Leu Asp Ala Ile Cys Pro 610 615 620

His Gln Glu His Val Leu Pro Met Ile Pro Ser Gly Gly Thr Phe Lys 625 630 635 640

Asp Val Ile Thr Glu Gly Asp Gly Arg Thr Lys Tyr 645 650

<210> 103

<211> 655

<212> PRT

<213> Brassica napus

<400> 103

Met Ala Ala Ala Thr Ser Ser Ser Pro Ile Ser Leu Thr Ala Lys Pro

1 5 10 15

Ser Ser Lys Ser Pro Leu Pro Ile Ser Arg Phe Ser Leu Pro Phe Ser 20 25 30

Leu Thr Pro Gln Lys Asp Ser Ser Arg Leu His Arg Pro Leu Ala Ile 35 40 45

Ser Ala Val Leu Asn Ser Pro Val Asn Val Ala Pro Pro Ser Pro Glu
50 55 60

Lys Thr Asp Lys Asn Lys Thr Phe Val Ser Arg Tyr Ala Pro Asp Glu 65 70 75

Pro Arg Lys Gly Ala Asp Ile Leu Val Glu Ala Leu Glu Arg Gln Gly 85 90 95

Val Glu Thr Val Phe Ala Tyr Pro Gly Gly Ala Ser Met Glu Ile His 100 105 110

- Gln Ala Leu Thr Arg Ser Ser Thr Ile Arg Asn Val Leu Pro Arg His 115 120 125
- Glu Gln Gly Gly Val Phe Ala Ala Glu Gly Tyr Ala Arg Ser Ser Gly 130 135 140
- Lys Pro Gly Ile Cys Ile Ala Thr Ser Gly Pro Gly Ala Thr Asn Leu 145 150 155 160
- Val Ser Gly Leu Ala Asp Ala Met Leu Asp Ser Val Pro Leu Val Ala 165 170 175
- Ile Thr Gly Gln Val Pro Arg Arg Met Ile Gly Thr Asp Ala Phe Gln 180 185 190
- Glu Thr Pro Ile Val Glu Val Thr Arg Ser Ile Thr Lys His Asn Tyr 195 200 205
- Leu Val Met Asp Val Asp Asp Ile Pro Arg Ile Val Gln Glu Ala Phe 210 215 220
- Phe Leu Ala Thr Ser Gly Arg Pro Gly Pro Val Leu Val Asp Val Pro 225 230 235 240
- Lys Asp Ile Gln Gln Leu Ala Ile Pro Asn Trp Asp Gln Pro Met 245 250 255
- Arg Leu Pro Gly Tyr Met Ser Arg Leu Pro Gln Pro Pro Glu Val Ser
- Gln Leu Gly Gln Ile Val Arg Leu Ile Ser Glu Ser Lys Arg Pro Val 275 280 285
- Leu Tyr Val Gly Gly Gly Ser Leu Asn Ser Ser Glu Glu Leu Gly Arg 290 295 300
- Phe Val Glu Leu Thr Gly Ile Pro Val Ala Ser Thr Leu Met Gly Leu 305 310 315 320
- Gly Ser Tyr Pro Cys Asn Asp Glu Leu Ser Leu Gln Met Leu Gly Met 325 330 335
- His Gly Thr Val Tyr Ala Asn Tyr Ala Val Glu His Ser Asp Leu Leu 340 345 350
- Leu Ala Phe Gly Val Arg Phe Asp Asp Arg Val Thr Gly Lys Leu Glu 355 360 365
- Ala Phe Ala Ser Arg Ala Lys Ile Val His Ile Asp Ile Asp Ser Ala 370 375 380
- Glu Ile Gly Lys Asn Lys Thr Pro His Val Ser Val Cys Gly Asp Val 385 390 395 400

Lys Leu Ala Leu Gln Gly Met Asn Lys Val Leu Glu Asn Arg Ala Glu 405 410 415

Glu Leu Lys Leu Asp Phe Gly Val Trp Arg Ser Glu Leu Ser Glu Gln
420 425 430

Lys Gln Lys Phe Pro Leu Ser Phe Lys Thr Phe Gly Glu Ala Ile Pro 435 440 445

Pro Gln Tyr Ala Ile Gln Ile Leu Asp Glu Leu Thr Glu Gly Lys Ala 450 455 460

Ile Ile Ser Thr Gly Val Gly Gln His Gln Met Trp Ala Ala Gln Phe 465 470 475 480

Tyr Lys Tyr Arg Lys Pro Arg Gln Trp Leu Ser Ser Ser Gly Leu Gly
485 490 495

Ala Met Gly Phe Gly Leu Pro Ala Ala Ile Gly Ala Ser Val Ala Asn 500 505 510

Pro Asp Ala Ile Val Val Asp Ile Asp Gly Asp Gly Ser Phe Ile Met 515 520 525

Asn Val Gln Glu Leu Ala Thr Ile Arg Val Glu Asn Leu Pro Val Lys 530 535 540

Ile Leu Leu Leu Asn Asn Gln His Leu Gly Met Val Met Gln Trp Glu 545 550 555 560

Asp Arg Phe Tyr Lys Ala Asn Arg Ala His Thr Tyr Leu Gly Asp Pro 565 570 575

Ala Arg Glu Asn Glu Ile Phe Pro Asn Met Leu Gln Phe Ala Gly Ala 580 585 590

Cys Gly Ile Pro Ala Ala Arg Val Thr Lys Lys Glu Glu Leu Arg Glu
595 600 605

Ala Ile Gln Thr Met Leu Asp Thr Pro Gly Pro Tyr Leu Leu Asp Val 610 615 620

Ile Cys Pro His Gln Glu His Val Leu Pro Met Ile Pro Ser Gly Gly 625 630 635 640

Thr Phe Lys Asp Val Ile Thr Glu Gly Asp Gly Arg Thr Lys Tyr 645 650 655

<210> 104

<211> 652

<212> PRT

<213> Brassica napus

<400> 104

- Met Ala Ala Ala Thr Ser Pro Ser Pro Ile Ser Leu Thr Ala Lys Pro 1 5 10 15
- Ser Ser Lys Ser Pro Leu Pro Ile Ser Arg Phe Ser Leu Pro Phe Ser 20 25 30
- Leu Thr Pro Gln Lys Pro Ser Ser Arg Leu His Arg Pro Leu Ala Ile 35 40 45
- Ser Ala Val Leu Asn Ser Pro Val Asn Val Ala Pro Glu Lys Thr Asp 50 55 60
- Lys Ile Lys Thr Phe Ile Ser Arg Tyr Ala Pro Asp Glu Pro Arg Lys
 65 70 75 80
- Gly Ala Asp Ile Leu Val Glu Ala Leu Glu Arg Gln Gly Val Glu Thr 85 90 95
- Val Phe Ala Tyr Pro Gly Gly Ala Ser Met Glu Ile His Gln Ala Leu 100 105 110
- Thr Arg Ser Ser Thr Ile Arg Asn Val Leu Pro Arg His Glu Gln Gly 115 120 125
- Gly Val Phe Ala Ala Glu Gly Tyr Ala Arg Ser Ser Gly Lys Pro Gly 130 135 140
- Ile Cys Ile Ala Thr Ser Gly Pro Gly Ala Thr Asn Leu Val Ser Gly
 145 150 155 160
- Leu Ala Asp Ala Met Leu Asp Ser Val Pro Leu Val Ala Ile Thr Gly
 165 170 175
- Gln Val Pro Arg Arg Met Ile Gly Thr Asp Ala Phe Gln Glu Thr Pro 180 185 190
- Ile Val Glu Val Thr Arg Ser Ile Thr Lys His Asn Tyr Leu Val Met 195 200 205
- Asp Val Asp Asp Ile Pro Arg Ile Val Gln Glu Ala Phe Phe Leu Ala 210 215 220
- Thr Ser Gly Arg Pro Gly Pro Val Leu Val Asp Val Pro Lys Asp Ile 225 230 235 240
- Gln Gln Gln Leu Ala Ile Pro Asn Trp Asp Gln Pro Met Arg Leu Pro 245 250 255
- Gly Tyr Met Ser Arg Leu Pro Gln Pro Pro Glu Val Ser Gln Leu Gly
 260 265 270

- Gln Ile Val Arg Leu Ile Ser Glu Ser Lys Arg Pro Val Leu Tyr Val 275 280 285
- Gly Gly Ser Leu Asn Ser Ser Glu Glu Leu Gly Arg Phe Val Glu 290 295 300
- Leu Thr Gly Ile Pro Val Ala Ser Thr Leu Met Gly Leu Gly Ser Tyr 305 310 315 320
- Pro Cys Asn Asp Glu Leu Ser Leu Gln Met Leu Gly Met His Gly Thr 325 330 335
- Val Tyr Ala Asn Tyr Ala Val Glu His Ser Asp Leu Leu Leu Ala Phe 340 345 350
- Gly Val Arg Phe Asp Asp Arg Val Thr Gly Lys Leu Glu Ala Phe Ala 355 360 365
- Ser Arg Ala Lys Ile Val His Ile Asp Ile Asp Ser Ala Glu Ile Gly 370 375 380
- Lys Asn Lys Thr Pro His Val Ser Val Cys Gly Asp Val Lys Leu Ala 385 390 395 400
- Leu Gln Gly Met Asn Lys Val Leu Glu Asn Arg Ala Glu Glu Leu Lys
 405 410 415
- Leu Asp Phe Gly Val Trp Arg Ser Glu Leu Ser Glu Gln Lys 420 425 430
- Phe Pro Leu Ser Phe Lys Thr Phe Gly Glu Ala Ile Pro Pro Gln Tyr 435 440 445
- Ala Ile Gln Val Leu Asp Glu Leu Thr Gln Gly Lys Ala Ile Ile Ser 450 455 460
- Thr Gly Val Gly Gln His Gln Met Trp Ala Ala Gln Phe Tyr Lys Tyr 465 470 475 480
- Arg Lys Pro Arg Gln Trp Leu Ser Ser Gly Leu Gly Ala Met Gly
 485 490 495
- Phe Gly Leu Pro Ala Ala Ile Gly Ala Ser Val Ala Asn Pro Asp Ala 500 505 510
- Ile Val Val Asp Ile Asp Gly Asp Gly Ser Phe Ile Met Asn Val Gln 515 520 525
- Glu Leu Ala Thr Ile Arg Val Glu Asn Leu Pro Val Lys Ile Leu Leu 530 535 540
- Leu Asn Asn Gln His Leu Gly Met Val Met Gln Trp Glu Asp Arg Phe 545 550 555 560

Tyr Lys Ala Asn Arg Ala His Thr Tyr Leu Gly Asp Pro Ala Arg Glu 565 Asn Glu Ile Phe Pro Asn Met Leu Gln Phe Ala Gly Ala Cys Gly Ile 580 590 Pro Ala Ala Arg Val Thr Lys Lys Glu Glu Leu Arg Glu Ala Ile Gln Thr Met Leu Asp Thr Pro Gly Pro Tyr Leu Leu Asp Val Ile Cys Pro 615 His Gln Glu His Val Leu Pro Met Ile Pro Ser Gly Gly Thr Phe Glu 635 Asp Val Ile Thr Glu Gly Asp Gly Arg Thr Lys Tyr <210> 105 <211> 10 <212> PRT <213> Brassica napus <400> 105 Ile Pro Ser Gly Gly Thr Phe Lys Asp Val 5 <210> 106 <211> 30 <212> DNA <213> Brassica napus <400> 106 atcccaagtg gtggcacttt caaagatgta 30 <210> 107 <211> 21 <212> DNA <213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 107 catctttgaa agtgccacca c

primer

21

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<210> 108
<211> 10
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic
<400> 108
Ile Pro Asn Gly Gly Thr Phe Lys Asp Val
<210> 109
<211> 30
<212> DNA
<213> Artificial Sequence
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<223> Description of Artificial Sequence: Synthetic
      primer
<400> 109
atcccaaatg gtggcacttt caaagatgta
                                                                     30
<210> 110
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic
      primer
<400> 110
catctttgaa agtgccacca t
                                                                    21
<210> 111
<211> 10
<212> PRT
<213> Brassica napus
<400> 111
Met Gln Trp Glu Asp Arg Phe Tyr Lys Ala
<210> 112
<211> 30
<212> DNA
<213> Brassica napus
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<400> 112
atgcaatggg aagatcggtt ctacaaagct
                                                                    30
<210> 113
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic
      primer
<400> 113
ctttgtagaa ccgatcttcc c
                                                                    21
<210> 114
<211> 10
<212> PRT
<213> Artificial Sequence
<223> Description of Artificial Sequence: Synthetic
      peptide
<400> 114
Met Gln Leu Glu Asp Arg Phe Tyr Lys Ala
<210> 115
<211> 30
<212> DNA
<213> Artificial Sequence
<223> Description of Artificial Sequence: Synthetic
      primer
<400> 115
atgcaattgg aagatcggtt ctacaaagct
                                                                    30
<210> 116
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic
     primer
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<400> 116 ctttgtagaa ccgatcttcc a